

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	Group Art Unit: 1773
)	
Timothy M. Shively <i>et al.</i>)	Examiner: Kevin R. Kruer
)	
Serial No.: 10/729,587)	Attorney Docket No.: P477
)	
Filed: December 6, 2003)	Confirmation No.: 1576
Title: FIRE RETARDANT SHADES		

APPEAL BRIEF

This is an appeal from the final rejection of the above-identified application made in the Office Action dated August 8, 2007. A Petition to Revive an Unintentionally Abandoned Application and Notice of Appeal were filed on October 14, 2010.

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is CPFilms, Inc.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any pending appeals or interferences which may directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

The status of the claims is as follows: claims 1 to 4, 7, 10 to 13 and 17 to 20 are rejected and claims 5, 6, 8, 9, 14 to 16 and 21 are cancelled. This is an appeal from the rejection of pending claims 1 to 4, 7, 10 to 13 and 17 to 20; claims 1, 11 and 19 are the only independent claims. The claims on appeal are set forth in full in the Appendix to this Brief.

IV. STATUS OF AMENDMENTS

None – Appellants did not seek to enter any amendments after the Office Action dated August 8, 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

This section provides a concise explanation of the subject matter defined in the independent claims involved in this appeal, namely claims 1, 11 and 19. Claim 1 is a clear transparent composite fire retardant shade material for use as a sun shade or blind having an outer side in use facing the sun and an inner side facing away from the sun and which comprises a film composite having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing UV absorber adhered to the inner side of the first film layer [Spec. page 2, lines 19 to 23] using a polyurethane resin adhesive containing 5-15% by weight resorcinol bis (diphenyl phosphate) fire retardant [Spec. page 3, lines 12 to 13, page 4, lines 12 to 15] with at least one of said two PET film layers also containing a fire retardant material [Spec. page 4, lines 12 to 14], the composite having a visible light transmission of up to 30% [Spec. page 4, lines 17 to 18, page 7, line 4] and a haze value of less than 6% [Spec. page 13, lines 25 to 26] and meeting fire retardant standard in accordance with German test method DIN 4102:B2 [Spec. page 10, line 25, page 11, lines 1 and 38, page 12, lines 22 and 23]. [Spec. page 3, line 9 to page 5, line 20 and page 6, line 15 to page 9, line 21].

Claim 11 is a solar control sun shade having an outer side in use facing the sun and an inner side facing away from the sun and which comprises as the shade material a clear transparent film composite [Spec. page 4, lines 20 to 21] having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing a UV absorber adhered to the inner side of the first film layer [Spec. page 2, lines 19 to 23] using a polyurethane resin adhesive containing 5-15% by weight resorcinol bis (diphenyl phosphate) fire retardant [Spec. page 3, lines 12 to 13, page 4, lines 12 to 15], with at least one of

said two PET film layers also containing a fire retardant material, the composite having a visible light transmission of up to 30% [Spec. page 4, lines 17 to 18, page 7, line 4] and a haze value of less than 6% and meeting fire retardant standard in accordance with German test method DIN 4102:B2 [Spec. page 10, line 25, page 11, lines 1 and 38, page 12, lines 22 and 23]. [Spec. p. 3, line 9 to page 5, line 20 and page 6, line 15 to page 9, line 21].

Claim 19 is a dual function sun shade and sound absorber having spaced apart micro-perforations therein [Spec. page 5, lines 14 to 16] with an outer side in use facing the sun and an inner side facing away from the sun and which comprises a clear transparent film composite having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing a UV absorber adhered to the inner side of the first film layer [Spec. page 2, lines 19 to 23] using a polyurethane resin adhesive containing 5-15% by weight resorcinol bis (diphenyl phosphate) fire retardant [Spec. page 5, lines 8 to 11], with at least one of said two PET film layers also containing a fire retardant material [Spec. page 3, lines 12 to 13, page 4, lines 12 to 15], the composite having a visible light transmission of up to 30% [Spec. page 4, lines 17 to 18, page 7, line 4] and a haze value of less than 6%, meeting fire retardant standard in accordance with German test method DIN 4102:B2 [Spec. page 10, line 25, page 11, lines 1 and 38, page 12, lines 22 and 23]. [Spec. p. 3, line 9 to page 5, line 20 and page 6, line 15 to page 9, line 21].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1) Whether claims 1 to 4, 7 and 10 to 13 are unpatentable under 35 U.S.C. § 103(a) over WO/0168360 [hereinafter referred to as Valinski] in view of Levchik et al., U.S. Patent 6,569,928 [hereinafter referred to as Levchik].

2) Whether claims 17, 19 and 20 are unpatentable under 35 U.S.C. § 103(a) over Valinski in view of Levchik, as applied to claims 1 to 4, 7 and 10 to 13, and further in view of Fuchs et al., U.S. Patent 5,740,649 [hereinafter referred to as Fuchs].

3) Whether claim 18 is unpatentable under 35 U.S.C. § 103(a) over Valinski in view of Levchik, as applied to claims 1 to 4, 7 and 10 to 13, and further in view of Jablonka et al., U.S. Patent 4,555,433 [hereinafter referred to as Jablonka].

VII. ARGUMENT

Appellants' invention is directed to a clear transparent composite fire retardant shade material for use as a sun shade or blind having an outer side in use facing the sun and an inner side facing away from the sun and which comprises a film composite having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing UV absorber adhered to the inner side of the first film layer using a polyurethane resin adhesive containing 5-15% by weight resorcinol bis (diphenyl phosphate) fire retardant with at least one of said two PET film layers also containing a fire retardant material, the composite having a visible light transmission of up to 30% and a haze value of less than 6% and meeting fire retardant standard in accordance with German test method DIN 4102:B2. (Claim 1). Claim 11 is directed to a solar control sun shade having similar limitations as claim 1, and claim 19 is directed to a dual function sun shade and sound absorber, having similar limitations and properties as claim 1.

The dependent claims (claims 2 to 4, 7, 10, 12, 13, 17, 18 and 20) are directed to specific features of the invention. Appellants respectfully submit that all claims are allowable over the prior art. Appellants contended in their response, and continue to contend in this Appeal Brief, that claims 1 to 4, 7, 10 to 13 and 17 to 20 are not obvious over Valinski in view of Levchik, or further in view of Fuchs or Jablonka since Valinski does not make obvious, alone or in combination with Levchik, claims 1 to 4, 7, 10 to 13 and 17 to 20. *See* Amendment and Remarks (May 22, 2007), pages 1 to 5.

In the Office Action of August 8, 2007, in the present case, the Examiner stated with regard to the rejection of claims 1 to 4, 7 and 10 to 13 under 103(a), that Valinski teaches a sunshade comprising first and second PET layers which read on the claimed "two polymeric

layers”, the second base layer may have a light reflecting metal layer on the inside surface which partly transmits visible light, the light reflecting layer reads on the claimed “metallized layer” and comprises an aluminum layer and transmits 50% or less visible light. The Examiner further stated that Valinski is “understood to be sufficiently specific to anticipate the claimed light transmittance” in claims 2 and 3. *See* Office Action, page 2. The Examiner further stated that the light-reflecting layer is adhered to the surface of the transparent substrate with an adhesive (which comprises tetrabromobisphenol-A fire retardant in a thermoset polyester urethane composition), the second base layer may have a protective layer that reads upon the claimed scratch resistant coating of claim 10, the PET layers may comprise UV light absorbers, the structure has a haze of less than 25%, and the dried adhesive may comprise 2 to 15 wt% fire retardant. The Examiner noted that “which side faces the sun in use does not distinguish the claimed laminate from the laminate taught in Valinski”. *See* Office Action, page 3.

The Examiner stated that Valinski does not teach that the polyester layers should comprise a fire retardant, but Levchik teaches that resorcinol bis(diphenyl phosphate) may be added to polyester compositions in order to improve the fire retardancy, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add resorcinol bis(diphenyl phosphate) to the PET layers taught in Valinski to improve the sunshade’s fire retardance to meet the desired standard. The Examiner further stated that Valinski does not teach that resorcinol bis(diphenyl phosphate) may be utilized in the polyester urethane adhesive, but Levchik teaches that resorcinol bis(diphenyl phosphate) may be added to polyester compositions, and the fire retardant does not migrate to the surface, and furthermore, resorcinol bis(diphenyl phosphate) is also known in the art not to migrate to the surface of urethane compositions (citing WO 96/06885, hereinafter referred to as “Blundell”), therefore it

would have been obvious to utilize resorcinol bis(diphenyl phosphate) fire retardant rather than tetrabromobisphenol-A in the thermoset polyester urethane composition of Valinski because the phosphate fire retardant is more environmentally friendly, and it would have been obvious to vary the amount of fire retardant to optimize clarity and fire resistance. *See* Office Action, pages 3 to 4.

Appellants respectfully submit that the claimed composite fire retardant material is not disclosed by or obvious over Valinski and Levchik and differs from the composite disclosed in Valinski in several ways: the adhesive of Appellants' composite material comprises a polyurethane resin containing a different fire retardant ("FR") material than Valinski (resorcinol bis(diphenyl phosphate) ("RDP") instead of tetrabromobisphenol-A ("tBPA")); the composite structure is different because the two PET outer film layers both have UVA which protects the fire retardant within the composite; and the composite meets the fire retardant standard DIN 4102:B2. Additionally, even assuming that the elements were shown (which Appellants submit is not the case), the combinations would not yield predictable results to one of ordinary skill in the art. As such, Appellants contend the Examiner has not presented a *prima facie* case of obviousness with any of the asserted grounds of rejection.

Claim 1 is directed to a clear transparent composite fire retardant material which is used as a sunshade, and the composite is substantially haze free, meets a high fire retardant standard (German test DIN 4102:B2) and is protected from the ravages of UV light. There are three novel features recited in Claim 1: a) the selection of the particular FR material for use with polyurethane adhesive; b) inclusion of UV absorbers in the inner and outer PET layers, which provides protection of the FR material in the adhesive; and 3) the composite material meeting a specific high FR standard while maintaining a high degree of optical clarity (that is, low haze)

with FR material present in both the adhesive and one of the PET layers. The Examiner has basically taken each novel feature and applied a particular document against the separate feature without taking into consideration the synergistic relationship of the different desired properties.

One of the earlier citations, U.S. Patent 4,185,046 (“Pengilly”), acknowledges the problems associated with the use of FR in an adhesive and states that the adhesive can be somewhat hazy due to the presence of FR, however, the haze problem is then totally ignored. *See* Pengilly at column 2, line 65 to column 3, line 5. Pengilly discloses an adhesive containing FR which can be used to coat PET film and other flammable substrates to act as a fire retardant for itself and the PET film/adhesive composite, but the composites disclosed are not transparent but instead are opaque due to the aluminum foil. *See* column 3, line 40 to column 4, line 15. Appellants have carefully selected both the FR material (RDP) and the location of the FR material in the composite to meet both the stringent haze requirements and FR standards such that the composite material is optically clear and has very low haze.

The FR material, RDP, is disclosed in Levchik as being added to polyester compositions along with a high charring polymer to help the RDP dissolve to improve fire retardant properties. While Levchik disclosed the use of RDP in polyester compositions, Levchik makes no reference whatsoever to the use of the FR material in a urethane adhesive or to the possible effects of fire retardant on the optical properties of the material to which the fire retardant is added, or to the problems associated with aging, such as when exposed to UV. In Appellants’ composite, the fire retardant is in the urethane adhesive layer, not in the PET layer, as disclosed by Levchik.

Valinski discloses a large number of film composites containing FR materials which are added to an adhesive layer and/or to an exterior coating layer, but the FR materials used in Valinski do not include RDP. Valinski does not recognize the problems associated with the aging

of polymeric coatings or layers containing FR material. Although Valinski states that UV absorbers may be incorporated into the PET film, he does not recognize the problems associated with long term exposure of the film to light or UV. *See* page 8 line 22, page 11 lines 9 to 11. All of the film composite structures shown in Figures 1 to 7 of Valinski have an FR coating layer (2) as an external layer (or exposed layer). Valinski even states that “the flame retardant coating 2 is on the top surface”, and “that the coating (2) may optionally be on both exposed surfaces”, referring to the FR coating. *See* page 10, lines 22 to 26.

Appellants’ claimed film composite material has two UV absorbing PET layers as the outer layers in the composite structure which protect the layers containing the FR materials from UV exposure which causes yellowing or bronzing on aging. Appellants have discovered the problems associated the weathering of film composites containing FR materials, such as long term exposure to UV light, and have solved this problem by incorporating a specific type of FR material into the adhesive layer, and then surrounded it with the PET layers having UV absorbing properties. Valinski is simply totally unaware of the weathering problem and is totally silent on the relative positioning of the FR coating and the PET layers containing UV absorbers. And Levchik only discloses the use of RDP in the PET layers, not in the urethane adhesive layer.

The materials disclosed in Valinski do not meet the stringent German FR standard DIN 4102:B2 that is met by Appellants’ composite material, but instead, the Valinski materials only meet the lower standard, DIN 4102:B1. An Affidavit by Anthony Brian Port of CPFilms Inc. (who is also the assignee of Valinski) was previously submitted as evidence to show that the Valinski material does not, and cannot, meet the DIN 4102:B2 standard.

Additionally, Appellants’ composite material is a commercially viable material which is the result of Appellants’ discovery that conflicting material properties could successfully be combined

to produce a composite material having FR properties as well as having low haze while also being resistant to negative effects of UV light exposure. Appellants' composite material has an adhesive layer with contains a compatible FR material present in sufficient quantity to meet the requirements of the test DIN 4102:B2 while still meeting the optical requirements necessary for transparent shades with regard to transparency and haze, and which is sufficiently resistant to the long term effects of UV light. Neither Valinski nor Levchik disclose this combination.

The aging problems of film composite containing FR materials are not disclosed or discussed in any of the cited prior art. In the Office Action, Blundell was cited to show that RDP can be added to urethanes without migration to the surface. *See* Office Action, page 3. The Examiner stated that RDP "is also known in the art not to migrate to the surface of urethane compositions" therefore it would have been obvious to utilize RDP rather than tBPA in the thermoset polyester urethane composition taught in Valinski because "said phosphate fire retardant is more environmentally friendly". *See* Office Action, pages 3 to 4. Appellants respectfully submit that Blundell relates to polyurethane foam materials, and the use of RDP in Blundell in foam materials is not relevant to the use of RDP or any FR material in clear polyurethane adhesives since the foam and liquid adhesive materials are too different to infer that the use of RDP in one material would make it obvious to use it in another. Additionally, Appellants respectfully submit that the fact that Blundell states that RDP is known not to migrate to the surface of urethane foam is irrelevant to the present claims, as is the fact that RDP is more environmentally friendly. Blundell is also totally silent on the effects of FR material on either the optical properties of film or aging.

To support a conclusion that a claim would have been obvious, all the claimed elements must have been known in the prior art, one skilled in the art must have been able to combine the

elements as claimed by known methods with no change in their respective functions, and the resulting combination must yield nothing more than predictable results to one of ordinary skill in the art. *KSR International Co. v. Teleflex*, 550 U.S. 398, 401 (2007); *see also KSR* 550 U.S. at 415-17 (2007) citing *Great Atlantic & P. Teas Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152 (1950), *Andersons's –Black-Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63 (1969), and *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976). Furthermore, the reason to combine or modify cannot be a reason that has become obvious only due to the clarifying power of ex post reasoning (such as the disclosure of the current specification). *See, e.g., In re Deuel*, 51 F.3d 1551, 1558 (Fed. Cir. 1995).

The primary references cited by the Examiner, Valinski and Levchik, disclose sunshades meeting only the DIN 4102:B1 fire retardant standard and to phosphorous-containing thermoplastic polyester compositions, respectively. Independent claims 1 and 11, as explicitly recognized by the Examiner, as well as claim 19, recite RDP as the FR agent in the adhesive, which Valinski does not disclose. *See Office Action*, page 3. Appellants respectfully submit that contrary to the assertions of the Examiner, Levchik also does not teach the use of RDP in an adhesive layer; instead, Levchik teaches the use of fire retardants (along with a high charring polymer) in the thermoplastic polyester, such as PET. Appellants respectfully submit that the fact that RDP is known in PET compositions and is known in the art not to migrate to the surface of urethane compositions is irrelevant and does not make it obvious or predictable to use RDP instead of tBPA in the urethane adhesive compositions of Valinski. Simply because RDP may not migrate to the surface of urethane compositions does not make it obvious to use it in Appellants' urethane adhesive layer. The Examiner appears to have overlooked the fact that Levchik is not using the RDP in an adhesive layer, but instead, uses it in the PET layer, and then

extrapolates this teaching of Levchik to replace the tBPA in the adhesive of Valinski with the RDP because it “is more environmentally friendly”. *See* Office Action, pages 3 to 4.

Not only does Valinski fail to disclose the use of RDP in a urethane adhesive layer or in the PET layers as claimed in claims 1 and 11, as acknowledged by the Examiner, as well as claim 19, but Levchik’s fundamental teaching is the use of RDP in a PET layer. Neither Valinski nor Levchik teach the use of RDP in a urethane adhesive, or the combination of RDP in a urethane adhesive layer and FR in the PET layer(s), in contrast to independent claims 1 and 11.

Furthermore, there are no teachings, suggestions, or reasoning in either Valinski or Levchik that the tBPA of Valinski, which is in the urethane adhesive layer, could be replaced by the RDP of Levchik, which is in the PET layer. In other words, the only reason to combine Valinski with Levchik is the disclosure of the Appellants’ specification. Such hindsight reasoning cannot form the basis for an obviousness rejection. *See In re Deuel*, 51 F.3d at 1558.

In addition, even if the references were combined, Appellants’ claims would not result, for the reasons previously specified. Additionally, Appellants’ claimed composite materials and sunshades have enhanced properties that are superior to the prior art sunshades of Valinski; specifically Applicants’ sunshades meet the stringent DIN 4102:B2 FR standards while also maintaining very low haze and having a visible light transmission of less than 30%. Because of the combination of the RDP in the adhesive layer and the FR material in the PET, combined with the UV absorbers in the PET layers, the sunshades of Appellants have enhanced FR properties as well as superior optical properties. Neither Valinski nor Levchik recognize that DIN 4102:B2 standard can be achieved by using Appellants’ combination, as disclosed in independent Claims 1, 11 and 19. Lacking such teachings, suggestions or reasoning, a person skilled in the art would

not have a motivation, or have a reasonable expectation of success of replacing the tBPA of Valinski's urethane composition with RDP that is used in PET compositions.

Appellants respectfully submit that the claimed composite material is not obvious in view of a combination of Valinski and Levchik. Neither Valinski nor Levchik disclose, either alone or in combination, the limitations of Appellants' claims. The cited combination does not point teach or suggest the use of RDP as the FR material in polyurethane adhesives, nor do they teach or suggest the problems associated with the effect of FR materials on the optical properties of the material to which it is added, or the effects of aging on the FR filled composite.

Appellants respectfully submit that since claims 1 and 11 are not obvious over Valinski in view of Levchik, claims 2 to 4, 7, 10, 12 and 13 are also not obvious over Valinski in view of Levchik.

With regard to the rejection of claims 17, 19 and 20 under 103(a), the Examiner repeats the rejections over claims 1 to 4, 7 and 10 to 13 but states that Valinski in view of Levchik does not teach that the sunshade may be perforated, but that Fuchs teaches that it is known in the art to make a foil "sound permeable" by making a multiplicity of small holes/perforations therein, and the perforations may be spaced 1.2 mm from each other. The Examiner concluded that it would have been obvious to one of ordinary skill in the art to put micro-perforations into the sunshade taught in Valinski at a spacing of 1.2 mm to make the sunshade sound absorbing. *See Office Action, page 4.*

Appellants respectfully submit that as previously discussed, the combination of Valinski and Levchik does not disclose or make obvious Appellants' composite material or sunshades. The addition of Fuchs does not cure these deficiencies. Therefore, Appellants respectfully

submit that claims 17, 19 and 20 are not obvious over the combination of Valinski in view of Levchik and Fuchs.

With regard to the rejection of claim 18 under 103(a), the Examiner repeats the rejections over claims 1 to 4, 7 and 10 to 13 but states that Valinski in view of Levchik does not teach that the sunshade may be formed with a plurality of adjacent cup shaped recesses arranged in the form of a grid, but Jablonka teaching that forming a plurality of adjacent cup shaped recesses arranged in the form of a grid makes the material sound deadening, therefore it would have been obvious to one of ordinary skill in the art to form the sunshade taught in Valinski with a plurality of adjacent cup shaped recesses arranged in a grid to make the sunshade sound deadening. *See* Office Action, pages 4 to 5.

Appellants respectfully submit that as previously discussed, the combination of Valinski and Levchik does not disclose or make obvious Appellants' composite material or sunshades. The addition of Jablonka does not cure these deficiencies. Therefore, Appellants respectfully submit that claim 18 is not obvious over the combination of Valinski in view of Levchik and Jablonka.

Appellants respectfully submit that there is no motivation or suggestion to combine Levchik with Valinski. As previously stated, Valinski requires a tBPA FR material in the adhesive and does not disclose FR and UV absorbers in the PET layers, and Levchik merely discloses that RDP can be used (in combination with a high charring polymer) as an FR material in polyester compositions. Therefore, Valinski cannot be successfully combined with Levchik, since neither Valinski nor Levchik, either alone or in combination, disclose a composite material or a sunshade having Appellants' claimed construction and limitations. Additionally, Appellants respectfully submit that the skilled practitioner would not look to combine Levchik with Valinski

because Valinski discloses that the FR coating is on the outermost exposed layer and uses tBPA as the FR in the adhesive layer, while Levchik merely discloses the use of RDP in a polyester composition in combination with a high charring polymer, but does not disclose the use of RDP in a urethane adhesive. The proposed combination of Levchik with Valinski does not suggest the claimed invention.

Appellants respectfully submit that Levchik fails to suggest anything that cures the deficiencies of Valinski, so the Examiner's proposed combinations fail. Further, Appellants respectfully submit that the skilled practitioner would not make the proposed combination because there is no suggestion or motivation to add the RDP of Levchik, that is used in a polyester polymer in combination with a high charring polymer, to replace the tBPA in the urethane adhesive of Valinski, or to put FR and UV absorbers into the PET layers. The introduction of Fuchs and/or Jablonka fail to remedy the deficiencies previously stated. Finally, Appellants respectfully submit that even if they were combined, the proposed combination does not yield the claimed invention because, as previously stated. Additionally, Appellants respectfully submit that the only reason to combine Valinski with Levchik is the disclosure of the Appellants' specification.

In the Response to Arguments section, the Examiner states that Appellants' argument with respect to Valinski placing the FR layer on the exterior of the laminate is not persuasive because Appellant is not comparing the closest embodiment of Valinski and the coating 2 (the FR coating) is optional. *See* Final Office Action, page 5. Appellants respectfully submit that while the FR coating (coating 2) may be optional, the only FR coating or treatment that Valinski contemplates that is not in the adhesive (which, as previously discussed, is a different FR material than Appellants' since Valinski uses tBPA while Appellants use RDP) is the optional

FR coating. Valinski does contemplate or disclose the use of FR in the film layers, such as in the PET. Therefore, Valinski has no reason to consider aging problems of PET layers containing FR materials since the FR is in a coating layer.

The Examiner states that regarding the argument that Valinski is silent on the relative position of the FR coating and the PET layers containing UVA and states that the argument “does not appear to be commensurate in scope with the claims”, and states that the claim allows either of the PET layers to comprise the FR material. *See* Office Action, pages 5 to 6.

Appellants respectfully submit that the argument is commensurate in scope with the claims since Appellant is claiming that both outer layers comprise PET film having a UV absorber. *See* claims 1, 11 and 19. It is very clear where the UV absorber is in Appellants’ claims – it is in both outer PET layers. Additionally, at least one of the outer PET layers has an FR material.

With regard to the Examiner’s comments about Levchik teaching that the composition may comprise a PET and that RDP may be used in PET, Appellants’ respectfully submit that even if the assertions by the Examiner are true, which Appellants do not agree, Levchik is teaching the use of an FR material in polymer compositions that also contain high charring polymers (that help dissolve the FR material into the polyester composition), but Levchik is not teaching the use of an FR, and specifically RDP, in a urethane adhesive. Whether the RDP is known to have low migration or not is irrelevant.

The Examiner admits that the prior art does not anticipate the claimed composite material. *See* Office Action, page 7. The Examiner states that “the skilled artisan would have expected the aging resistance of the composite to improve if the optional UV absorbers were included in the composite taught in Valinski” and “would have known how to achieve a composite meeting the claimed FR requirements” given the prior art. *See* Office Action, page 7.

Appellants respectfully submit that the Examiner has continued to use improper hindsight reconstruction and Appellants' disclosure to provide the motivation to improve the composite material. Valinski was not even aware that there was a problem with aging resistance of the composite. Additionally, as acknowledged by the Examiner, Pengilly teaches that addition of FR to a composition increases haze, but Appellants respectfully disagree with the Examiner's assertion that "Pengilly provides ample teaching to allow the skilled artisan to select the type and amount of FR additive". *See* Office Action, page 7. Since Pengilly does not contemplate aging resistance problems associated with the composite materials or sunshades, Appellants respectfully submit that Pengilly does not provide teaching to select the type and amount of FR additive for a composite material as claimed.

Finally, the Examiner also stated that Appellants' declaration and data were fully considered but is not persuasive because it is not clear which samples were comparative examples and which were inventive examples, and it is not clear what layers and compositions each of the samples comprised. Applicants respectfully submit that the declaration states that examples that are made in accordance with the construction of Figure 6 of Valinski were tested, and examples that were made in accordance with the construction of Figure 1 of the present application were tested. *See* Declaration at page 4, paragraph 9 and page 5, paragraph 11 respectively. To summarize, comparative samples in accordance with Valinski were tested that comprised the following construction and having the following layers, as disclosed in Valinski at page 11, line 22 to page 12, line 2 and Figure 6:

FR optical coating **2**

PET Sheet **1a**

Adhesive (with FR) **4**

Metal coating layer **3**

PET Sheet **1**

where the FR optical coating is described as a reaction product of brominated acrylated oligomer and bis(2-chloroethyl) vinyl phosphonate (*See* page 10, lines 1 to 4) and the adhesive layer is described as an optically clear FR adhesive layer that is an isocyanate terminated polyester urethane with tBPA (*See* page 7, lines 12 to 19). Samples of the invention in accordance with the present application that were tested comprised the following construction and having the following layers, as disclosed in the present application at page 6, line 15 to page 8, line 19:

PET Sheet having UVA **14**

Adhesive (with FR) **13**

Metal (aluminum) coating layer **12**

PET Sheet having UV and FR **11**

where the FR adhesive layer contains RDP. Appellants' samples, which have UV absorbers in the PET layers that protect the adhesive layer comprising RDP unexpectedly meet the more stringent DIN 4102:B2 standard, while Valinski's samples, which only has an FR coating as the outermost layer on top of the PET layer, only meet the DIN 4102:B3 standard, as stated in the Declaration at paragraphs 11 and 9, and Exhibits C and B, respectively. As stated in paragraph 12 of the Declaration, Appellants' samples also have superior weathering performance compared to the samples of Valinski's construction. Appellants respectfully submit that Valinski's construction does not provide the superior protection of the adhesive layer containing the FR material since Valinski's samples do not comprise UV absorbers to protect the FR material in the adhesive layer. Stated differently, Valinski did not understand the importance of the 'positional relationship' of the UV absorbers, where the UV absorber is in the exposed PET layer that is

protecting the adhesive containing the FR material as well as the FR in the PET layer, while in Valinski's constructions, the FR coating is on the outermost or the exposed layer, on top of the PET layer, so even if the PET layer comprised a UV absorber, it would provide no protection for the FR coating. Appellants' composite material meets the stringent FR standards while still meeting the optical requirements necessary for transparent shades with regard to transparency and haze, and which is sufficiently resistant to the long term effects of UV light, something previously not possible.

E. Conclusion

Appellants respectfully conclude that the currently rejected claims are not obvious. The cited documents neither suggest nor disclose the claimed invention, whether considered alone or in the proposed combination. Instead, the claimed invention can be made only with impermissible hindsight reconstruction based on review of Appellants' application. Further, the proposed combination would not be made by the skilled practitioner and, even if made, does not result in the claimed invention. Thus, the Examiner's rejection of the pending claims 1 to 4, 7, 10 to 13 and 17 to 20 should be reversed and instead the claims should be allowed as presented.

Respectfully submitted,

Solutia Inc.

Dated: December 14, 2010

/Michelle Bugbee/
Michelle Bugbee
Registration No. 42,370
Attorney for Appellants

Customer Number: 93041
Solutia Inc.
Attn: IP Dept.
575 Maryville Centre Drive
St. Louis, MO 63141
Tel: (413) 730-2091
Fax: (413) 730-3610

VIII. CLAIMS APPENDIX

Below are the claims involved in the appeal:

1. A clear transparent composite fire retardant shade material for use as a sun shade or blind having an outer side in use facing the sun and an inner side facing away from the sun and which comprises a film composite having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing UV absorber adhered to the inner side of the first film layer using a polyurethane resin adhesive containing 5-15% by weight Rescorcinol bis (diphenyl phosphate) fire retardant with at least one of said two PET film layers also containing a fire retardant material, the composite having a visible light transmission of up to 30% and a haze value of less than 6% and meeting fire retardant standard in accordance with German test method DIN 4102:B2.
2. A composite as claimed in Claim 1 wherein the first film layer has a metallized layer on said inner side and the adhesive is applied over the metallized layer.
3. A material as claimed in Claim 2 wherein the metallized layer comprises a vacuum deposition of aluminium or an aluminium alloy.
4. A material as claimed in Claim 3 wherein the visible light transmission is less than 5%.
7. A material as claimed in Claim 1 wherein the adhesive contains a fire retardant such that the composite has a haze of about 5% or less.
10. A material as claimed in Claim 1 having a scratch resistant layer coated onto the further film layer.
11. A solar control sun shade having an outer side in use facing the sun and an inner side facing away from the sun and which comprises as the shade material a clear transparent film composite having a first transparent PET film outer layer containing a UV absorber with a

further transparent PET film inner layer also containing a UV absorber adhered to the inner side of the first film layer using a polyurethane resin adhesive containing 5-15% by weight Resorcinol bis (diphenyl phosphate) fire retardant, with at least one of said two PET film layers also containing a fire retardant material, the composite having a visible light transmission of up to 30% and a haze value of less than 6% and meeting fire retardant standard in accordance with German test method DIN 4102:B2.

12. A sun shade as claimed in Claim 11 wherein the first film layer has metallized layer deposited on said one side thereof.

13. A sun shade as claimed in Claim 10 wherein the metallized layer comprise aluminium or aluminium alloy, the two polymeric layer comprise PET film, and the composite has a haze value of less than 5%.

17. A sun shade as claimed in Claim 11 and which also functions as a sound absorbing elements, the composite having spaced apart micro-perforations therein.

18. A sun shade as claimed in Claim 11 and which also functions as a sound absorbing element wherein the composite is formed with a plurality of adjacent cup shaped recesses arranged in the form of a grid.

19. A dual function sun shade and sound absorber having spaced apart micro-perforations therein with an outer side in use facing the sun and an inner side facing away from the sun and which comprises a clear transparent film composite having a first transparent PET film outer layer containing a UV absorber with a further transparent PET film inner layer also containing a UV absorber adhered to the inner side of the first film layer using a polyurethane resin adhesive containing 5-15% by weight Resorcinol bis (diphenyl phosphate) fire retardant, with at least one of said two PET film layers also containing a fire retardant material, the composite having a

visible light transmission of up to 30% and a haze value of less than 6%, meeting fire retardant standard in accordance with German test method DIN 4102:B2.

20. A shade as claimed in Claim 19 wherein the first film layer has an aluminium layer deposited on one side thereof and the micro-perforation are spaced apart 2.0 mm or less.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.